

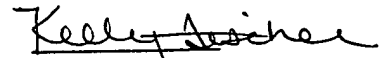
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Schwartz  
Serial No.: 09/815,978  
Filed: March 22, 2001  
For: HYDRAZINE-BASED AND CARBONYL-  
BASED BIFUNCTIONAL CROSSLINKING  
REAGENTS  
Art Unit: Unassigned  
Examiner: Unassigned

I hereby certify that this paper and the attached  
papers are being deposited with the United States  
Postal Service as first class mail in an envelope  
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ATTN: BOX PGPUB DRAWINGS  
Commissioner for Patents  
Washington, D.C. 20231, on this date.

04/17/01  
Date

  
Kelly Fischer

PETITION PURSUANT TO 37 C.F.R. §1.182 - QUESTIONS NOT SPECIFICALLY  
PROVIDED FOR: REQUEST FOR ENTRY OF REPLACEMENT DRAWINGS

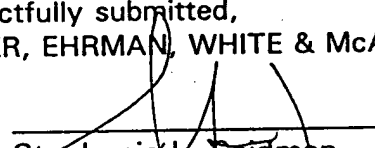
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Dear Sir:

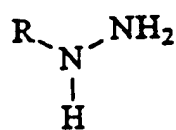
This is a Petition pursuant to 37 C.F.R. §1.182 to request the entry of replacement drawings in the publication of the above-identified application. The replacement drawings provided herewith are Formal Drawings. Therefore these drawings are of better quality than those originally filed. Applicants respectfully request the entry of the replacement drawings.

Respectfully submitted,  
HELLER, EHRMAN, WHITE & McAULIFFE LLP

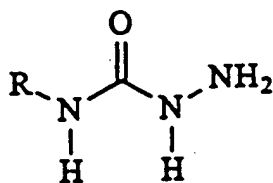
By:

  
Stephanie L. Seidman  
Registration No. 33,779

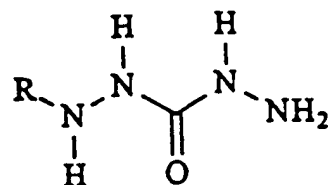
Attorney Docket No.: 37154-753  
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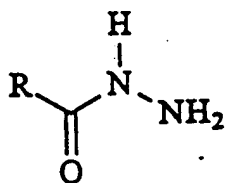
hydrazine



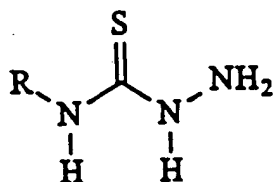
semicarbazide



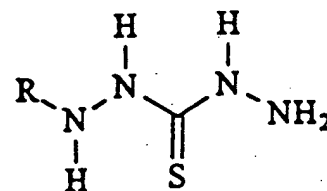
carbazine



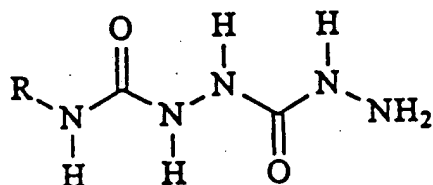
hydrazide



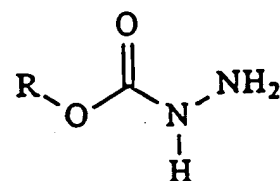
thiosemicarbazide



thiocarbazine



carbonic acid dihydrazine



hydrazine carboxylate

FIG. 1

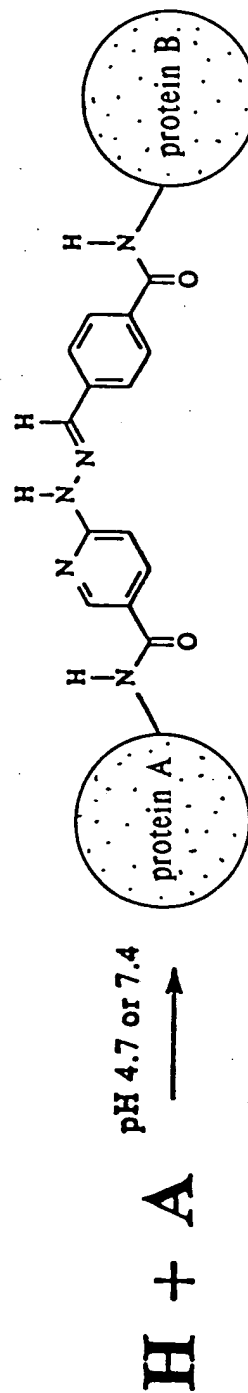
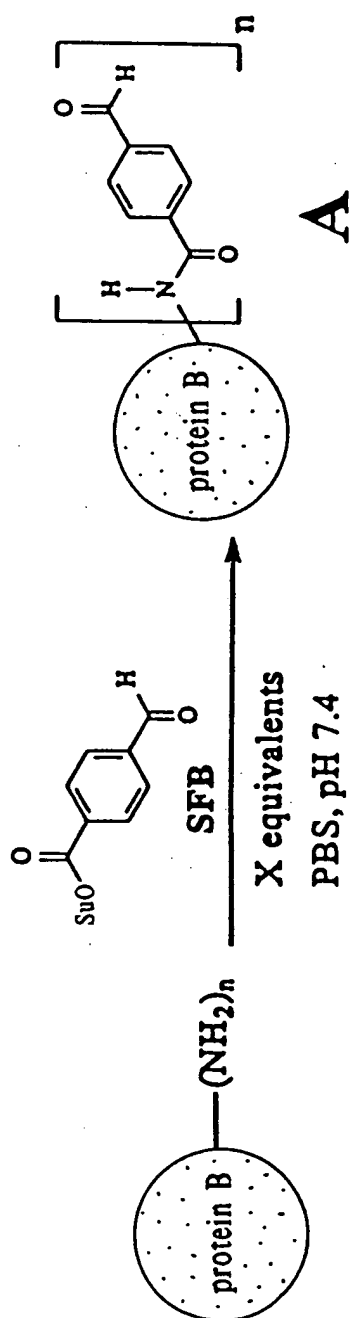
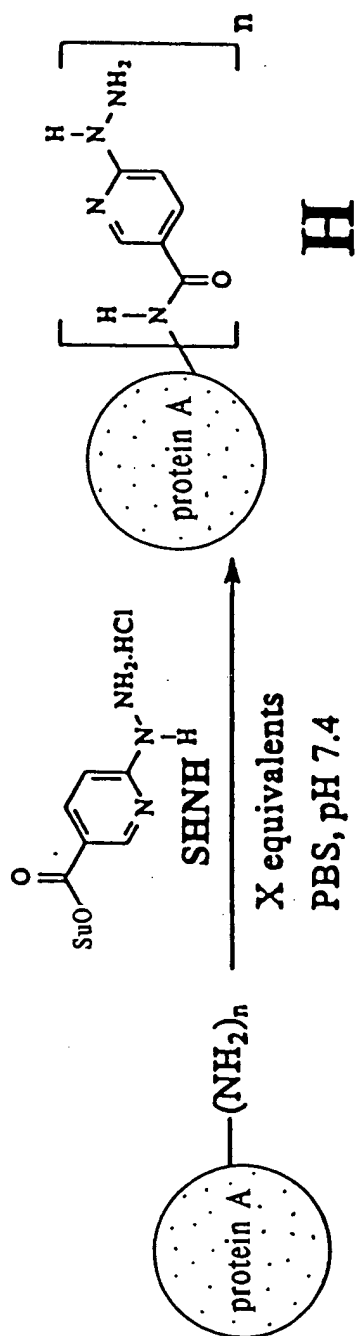


FIG. 2

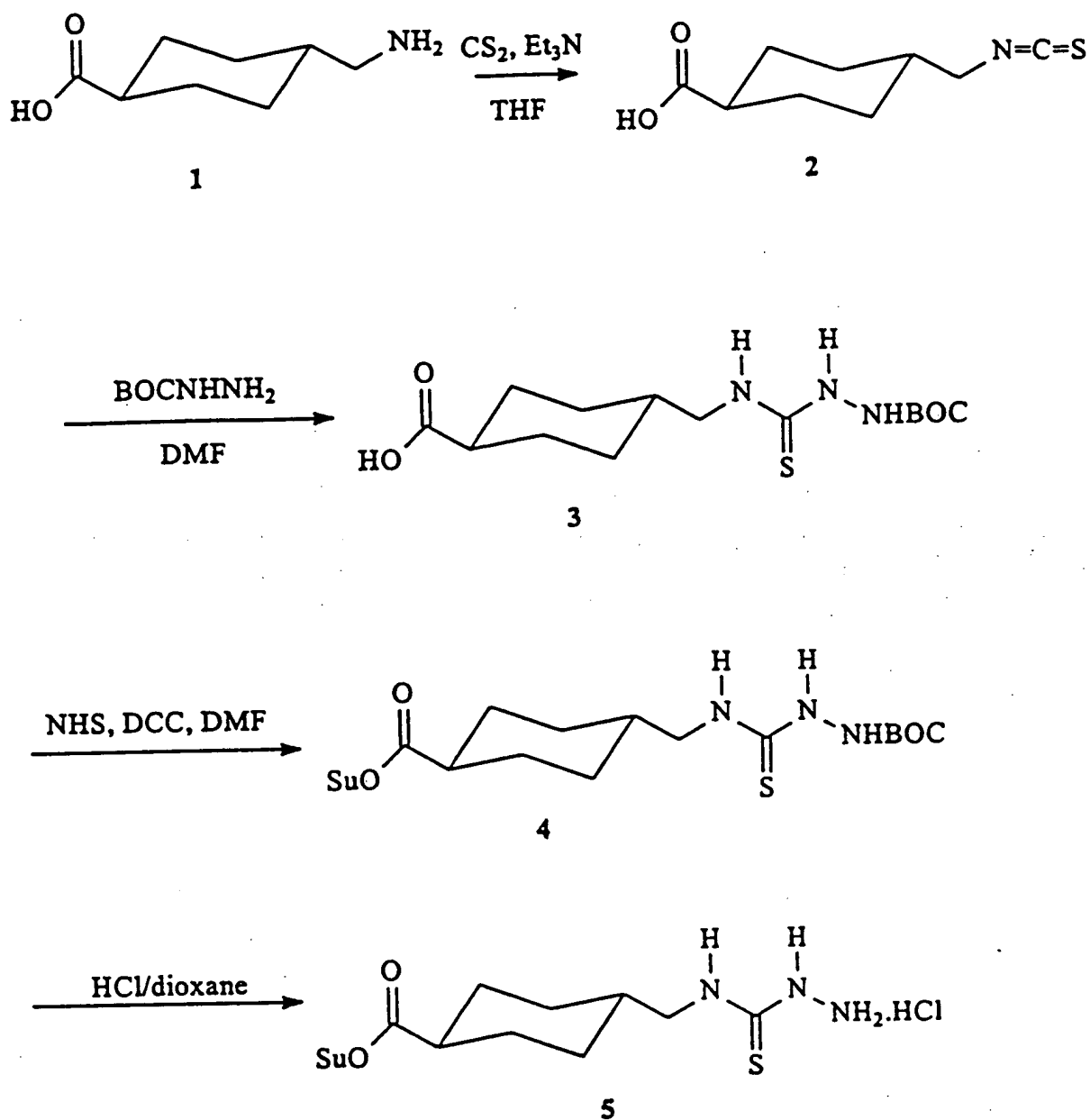


FIG. 3

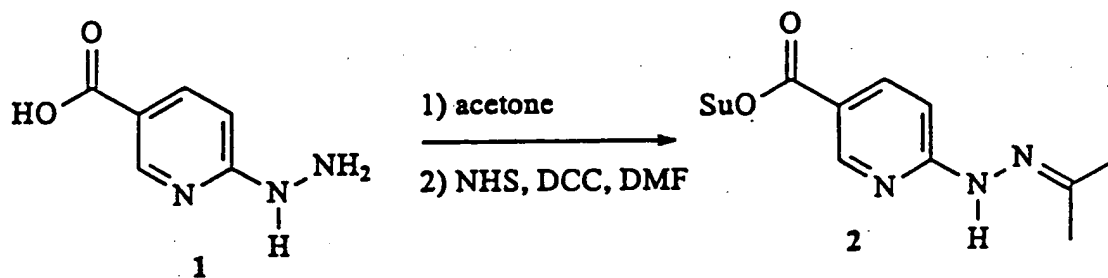
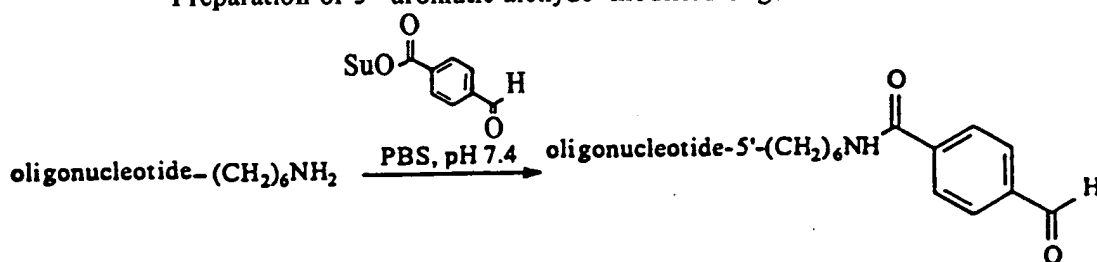
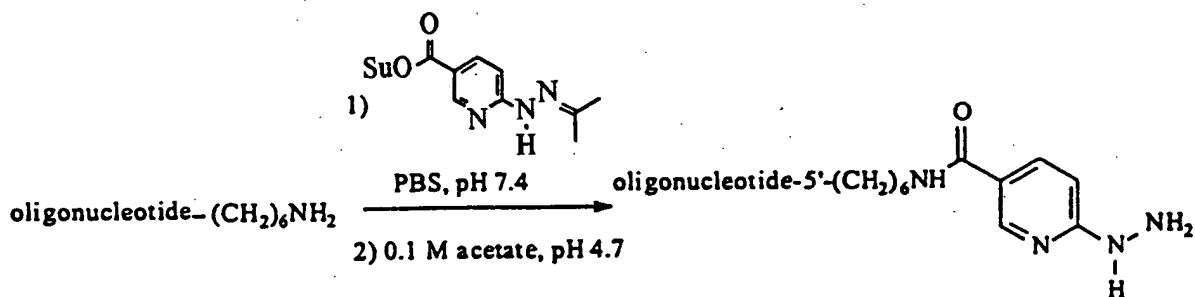


FIG. 4

Preparation of 5'-aromatic aldehyde-modified oligonucleotide:



Preparation of 5'-heteroaromatic hydrazine-modified oligonucleotide:



Conjugation of hydrazino-modified oligonucleotide to aldehyde-modified oligonucleotide

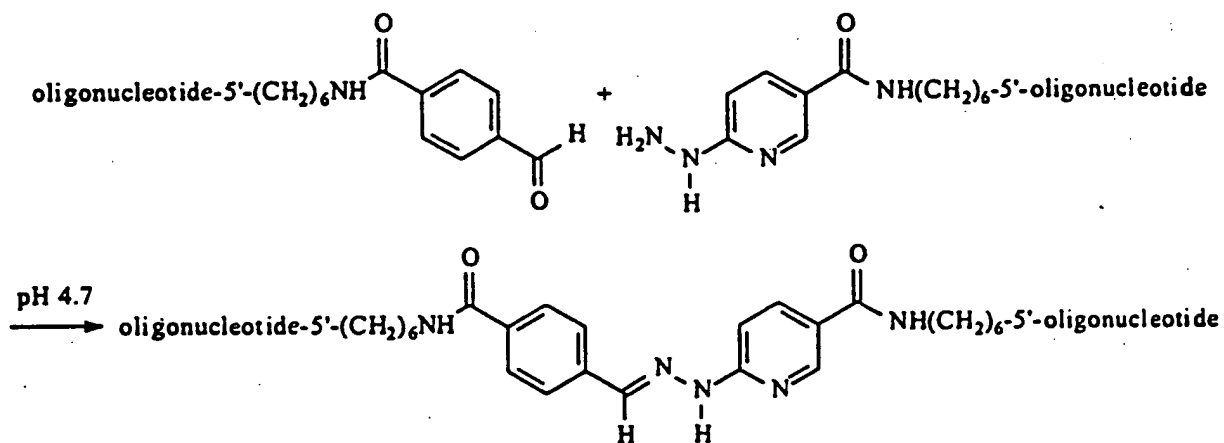


FIG. 5

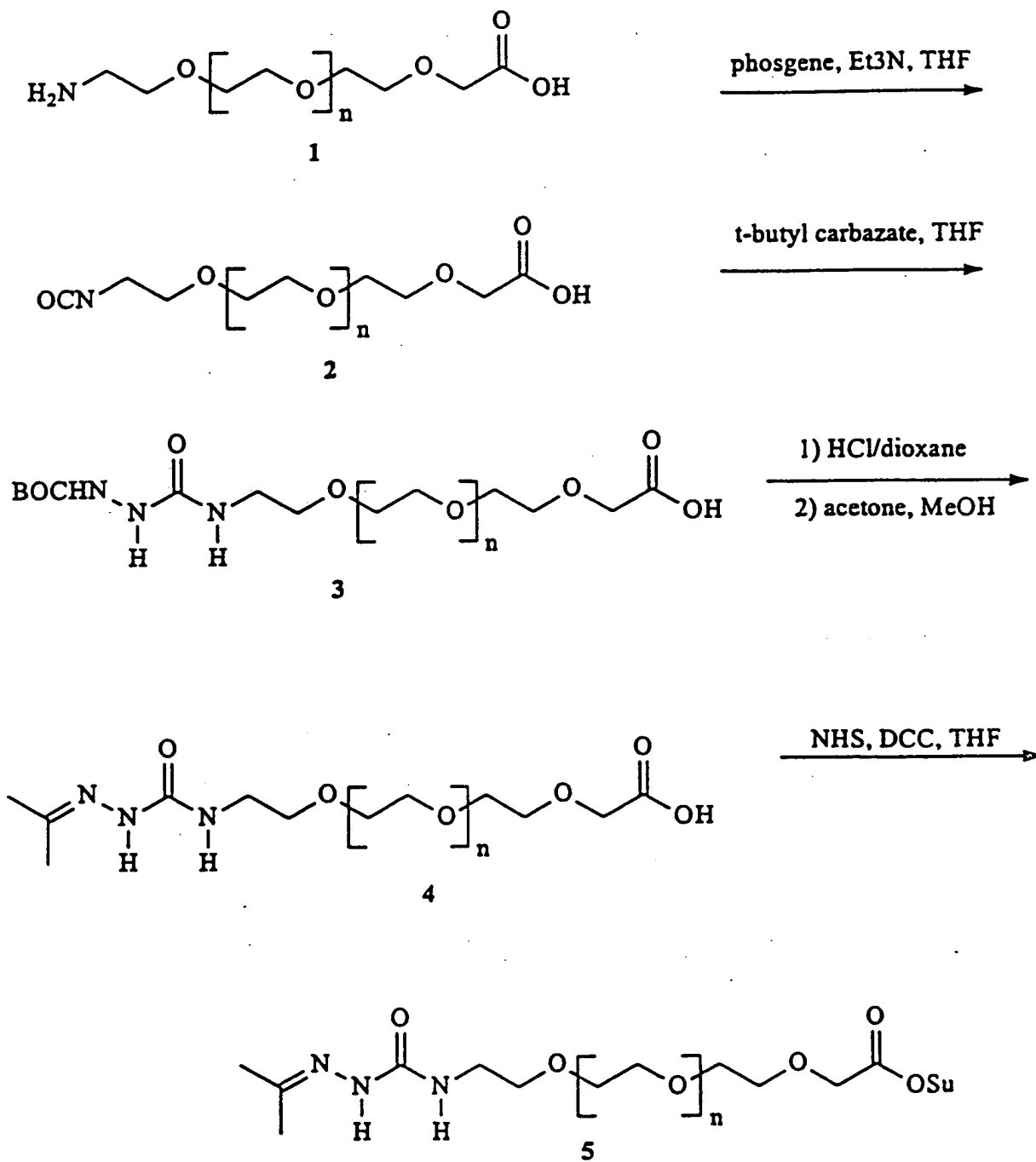


FIG. 6

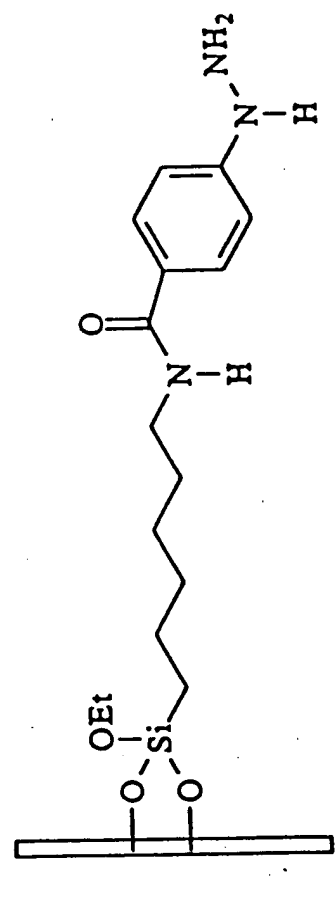
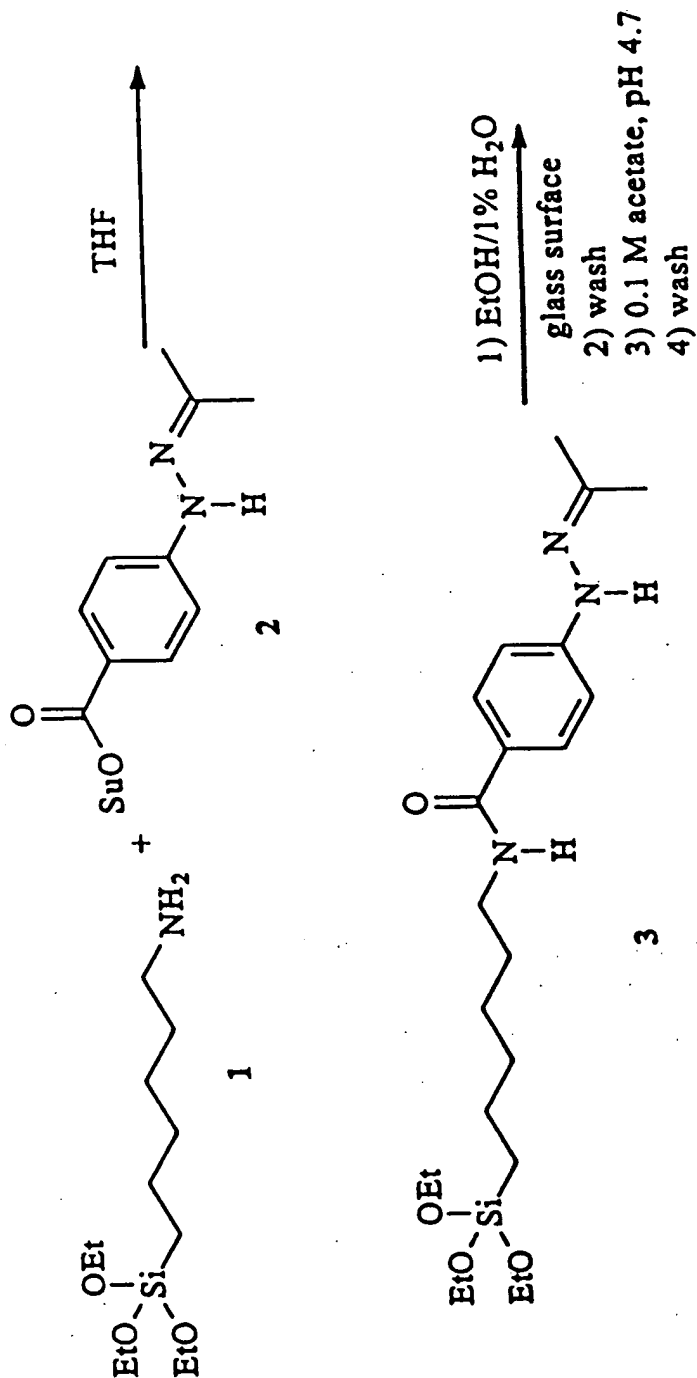


FIG. 7



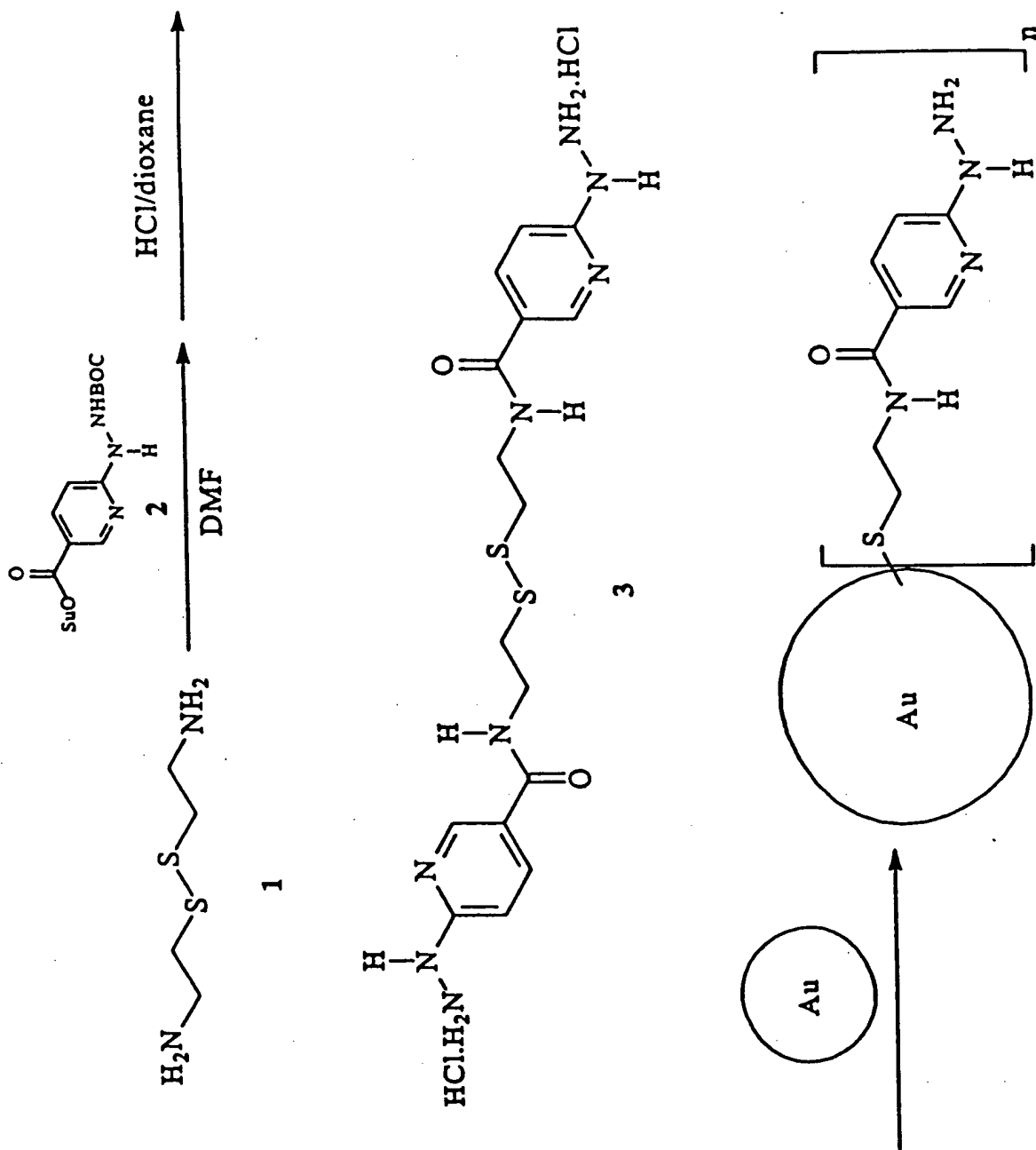
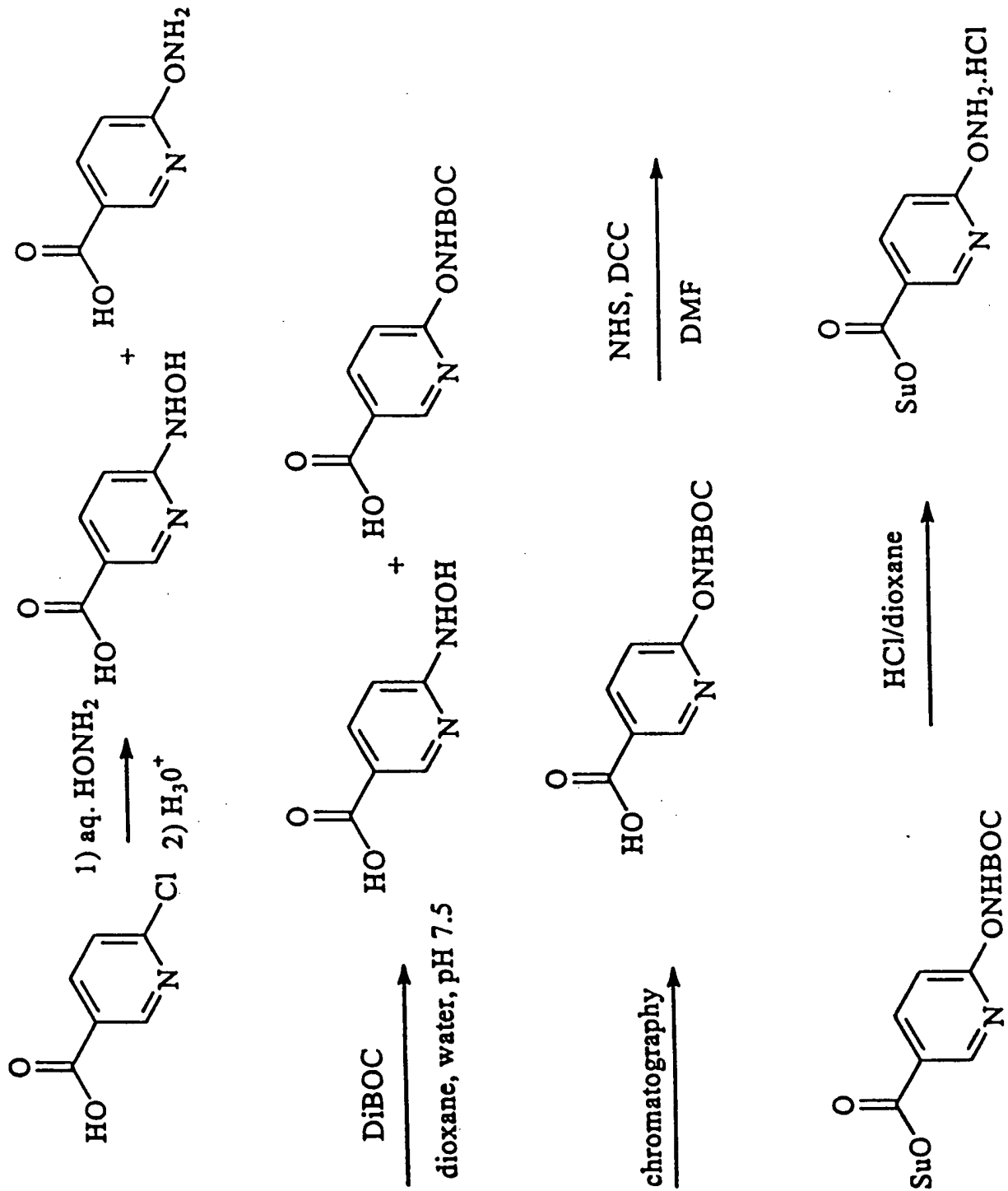


FIG. 8



**FIG. 9**